Species	Stressor	Substance interaction with lung residents cell membrane components	Transcription of genes encoding acute phase proteins	Reference
Mouse	Ultrafine carbon particles	Yes, inhalation of 380 ug/m^3 for 4 or 24 h.	Yes, increased *Saa3* gene expression at 24 h.	(Andre et al., 2006)
Mouse	Diesel exhaust particles	Yes, inhalation of 20 mg/m^3.	Yes, Increased expression of *Saa3* in lung tissue. No expression of *Sap, Saa1 or Saa3* genes on liver tissue.	(Saber et al., 2009; Saber et al., 2013)
Mouse	Carbon black	Yes, inhalation of 20 mg/m^3.	Yes, increased expression of *Saa3* in lung tissue. No expression of *Sap, Saa1 or Saa3* genes on liver tissue.	(Saber et al., 2009; Saber et al., 2013)
Mouse	Titanium dioxide nanoparticles	Yes, inhalation of 42.4 mg/m^3.	Yes, increased expression of *Saa1* and *Saa3* in lung tissue	(Halappanavar et al., 2011)
Mouse	Carbon black nanoparticles	Yes, intratracheal instillation of 162 µg.	Yes, significant *Saa1, Saa2* and *Saa3* gene expression increase in lung tissue, at days 1, 3 and 28 after exposure. *Saa3* gene expression increase in liver tissue at day 1 after exposure.	(Bourdon et al., 2012)
Mouse	Titanium dioxide nanoparticles	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, genes biological processes related to acute phase response genes were enriched at day 1 post-exposure. There was also an increase in gene expression of *Saa1*, *Saa2* and *Saa3* in lung tissue after 1 day.	(Husain et al., 2013)
Mouse	Titanium dioxide nanoparticles	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung issue at days 1, 3 and 28 after exposure with 162 µg, and at day 3 with 54 µg.	(Saber et al., 2013)
Mouse	Carbon black nanoparticles	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung issue at days 1, 3 and 28 after exposure with 54 µg and 162 µg, and at days 1 and 3 with 18 µg.	(Saber et al., 2013)
Mouse	Multiwalled carbon nanotubes	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung issue at days 1, 3 and 28 with all doses.	(Saber et al., 2013)
Mouse	Singlewalled carbon nanotubes	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung issue at days 1, 3 and 28 after exposure with 54 µg and 162	(Saber et al., 2013)

Species	Stressor	Substance interaction with lung residents cell membrane components	Transcription of genes encoding acute phase proteins	Reference
			µg, and at days 1 and 3 with 18 µg.	
Mouse	Titanium dioxide	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, gene pathways related to acute phase response were significantly altered 1 day after exposure.	(Halappanavar et al., 2015)
Mouse	Diesel exhaust particles	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* gene expression after 1, 3 and 28 days with 162 µg, at day 28 with 54 µg, and at day 3 with 18 µg.	(Kyjovska et al., 2015)
Mouse	Multiwalled carbon nanotubes (referred as CNT_{small})	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased differential expression of acute phase response genes in lung and liver tissue.	(Poulsen, Saber, Mortensen, et al., 2015; Poulsen, Saber, Williams, et al., 2015)
Mouse	Multiwalled carbon nanotubes (referred as CNT_{large})	Yes, 18, 54 and 162 µg. intratracheal instillation of	Yes, increased differential expression of acute phase response genes in lung and liver tissue.	(Poulsen, Saber, Mortensen, et al., 2015; Poulsen, Saber, Williams, et al., 2015)
Mouse	Sanding dust from epoxy composite containing carbon nanotubes	Yes, intratracheal instillation of 486 µg.	Yes, significant increase in *Saa1* mRNA expression in liver tissue.	(Saber et al., 2016)
Mouse	Sanding dust from epoxy composite without carbon nanotubes	Yes, intratracheal instillation of 486 µg.	Yes, significant increase in *Saa1* mRNA expression in liver tissue.	(Saber et al., 2016)
Mouse	Carbon nanotubes	Yes, intratracheal instillation of 162 µg.	Yes, significant increase in *Saa1* mRNA expression in liver tissue.	(Saber et al., 2016)
Mouse	Graphene oxide	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung tissue, at all dose 1 and 3 days after exposure. Increased gene expression of *Saa1* in liver tissue 1 day after exposure to 18 µg, and 3 days after exposure to 162 µg.	(Bengtson et al., 2017)

Species	**Stressor**	**Substance interaction with lung residents cell membrane components**	**Transcription of genes encoding acute phase proteins**	**Reference**
Mouse	Reduced graphene oxide	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased mRNA expression of *Saa3* in lung tissue, 3 days after exposure to 162 µg. No changes in gene expression of *Saa1* in liver tissue.	(Bengtson et al., 2017)
Mouse	Carbon black	Yes, intratracheal instillation of 162 µg.	Yes, increased mRNA expression of *Saa3* in lung tissue 1, 3, 28 and 90 days after exposure. Increased gene expression of *Saa1* in liver tissue 1 day after exposure.	(Bengtson et al., 2017)
Mouse	Multiwalled carbon nanotubes	Yes, intratracheal instillation of 6, 18 and 54 µg.	Yes, increased *Saa1* mRNA expression in liver tissue, 1 day after exposure to 18 and 54 µg. Increase in *Saa1* mRNA levels in liver tissue 28 days after exposure to 54 µg. Increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 6, 18 and 54 µg. Increase in *Saa3* mRNA levels in lung tissue 28 days after exposure to 18 and 54 µg.	(Poulsen et al., 2017)
Mouse	Unmodified rutile (TiO2)	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue 1, 3 and 28 days after exposure to 162 µg. Increased expression of *Saa1* in liver tissue 1 day after exposure to 162 µg and 3 days after exposure to 54 and 162 µg.	(Wallin et al., 2017)
Mouse	Surface modified rutile (TiO2)	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue 1, and 28 days after exposure to 54 µg, and 1, 3 and 28 days after exposure to 162 µg. Increased expression of *Saa1* in liver tissue 1 day after exposure to 162 µg.	(Wallin et al., 2017)
Mouse	Particulate matter from non-commercial airfield	Yes, intratracheal instillation of 6, 18 and 54 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue and *Saa1* mRNA in liver tissue after 1 day of exposure to 54 µg. No effect after 28 and 90 days.	(Bendtsen et al., 2019)

Species	**Stressor**	**Substance interaction with lung residents cell membrane components**	**Transcription of genes encoding acute phase proteins**	**Reference**
Mouse	Particulate matter from commercial airport	Yes, intratracheal instillation of 6, 18 and 54 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue after 1 day of exposure to 18 and 54 µg. No effect after 28 and 90 days.	(Bendtsen et al., 2019)
Mouse	Diesel exhaust particles	Yes, intratracheal instillation of 18, 54 and 54 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue after 1 day of exposure to 54 and 162 µg, and increased expression of *Saa1* mRNA in liver tissue 1 day after exposure to 162 µg. No effect after 28 days.	(Bendtsen et al., 2019)
Mouse	Carbon black	Yes, intratracheal instillation of 54 µg.	Yes, increased expression of *Saa3* mRNA in lung tissue at day 1 and day 90.	(Bendtsen et al., 2019)
Mouse	Uncoated zinc oxide nanoparticles	Yes, intratracheal instillation of 0.2, 0.7 and 2 µg.	Yes, increase on *Saa3* mRNA in lung tissue 1 day after exposure to 2 µg. No effect 3 and 28 days after exposure.	(Hadrup et al., 2019)
Mouse	Coated zinc oxide nanoparticles	Yes, intratracheal instillation of 0.2, 0.7 and 2 µg.	Yes, increase on *Saa3* mRNA in lung tissue 1 day after exposure to 0.7 and 2 µg. No effect 3 and 28 days after exposure.	(Hadrup et al., 2019)
Mouse	Surface modified hallosytes	Yes, intratracheal instillation of 6, 18 and 54 µg.	Yes, increase *Saa3* mRNA expression in lung tissue 1 and 3 days after exposure to 54 µg. No effect on *Saa1* mRNA expression on liver tissue.	(Barfod et al., 2020)
Mouse	Carbon black	Yes, intratracheal instillation of 162 µg.	Yes, increase *Saa3* mRNA expression in lung tissue 1, 3 and 28 days after exposure. No effect on *Saa1* mRNA expression on liver tissue.	(Barfod et al., 2020)
Mouse	Nanofil9 (Organomodified nanoclay)	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to all doses, and 3 days after exposure to 6 and 18 µg.	(Di Ianni et al., 2020)
Mouse	NanofilSE3000 (Organomodified nanoclay)	Yes, intratracheal instillation of 6, 18 and 54 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 54 and 162 µg, and 3 days after exposure to 54 µg.	(Di Ianni et al., 2020)

Species	Stressor	Substance interaction with lung residents cell membrane components	Transcription of genes encoding acute phase proteins	Reference
Mouse	Bentonite	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 and 3 days after exposure to all doses, and 28 days after exposure to 162 µg.	(Di Ianni et al., 2020)
Mouse	Carbon black	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 and 3 days after exposure to all doses, and 28 days after exposure to 54 and 162 µg.	(Di Ianni et al., 2020)
Mouse	Lipopolysaccharide	Yes, intratracheal instillation of 4 µg.	Yes, increased *Saa3* and *Saa1* mRNA expression in lung tissue 1 day after exposure. Increased *Saa1* mRNA expression in liver tissue 1 day after exposure.	(Danielsen et al., 2021)
Mouse	Zinc oxide	Yes, intratracheal instillation of 0.7 and 2 µg.	Yes, increased *Saa1* mRNA expression in liver tissue 1 day after exposure to 0.7 µg. No change in *Saa3* mRNA expression in lung tissue.	(Gutierrez et al., 2023)
Mouse	Copper oxide	Yes, intratracheal instillation of 2, 6 and 12 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 2 and 6 µg. Increased *Saa1* mRNA expression in liver tissue 1 day after exposure to 6 µg.	(Gutierrez et al., 2023)
Mouse	Tin dioxide	Yes, intratracheal instillation of 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue and *Saa1* mRNA expression in liver tissue, 1 day after exposure to 162 µg.	(Gutierrez et al., 2023)
Mouse	Titanium dioxide	Yes, intratracheal instillation of 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue and *Saa1* mRNA expression in liver tissue 1 day after exposure.	(Gutierrez et al., 2023)
Mouse	Carbon black	Yes, intratracheal instillation of 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 and 28 days after exposure. Increased *Saa1* mRNA expression in liver tissue 1 day after exposure	(Gutierrez et al., 2023)
Mouse	Titanium dioxide (NM-1)	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 162 µg. No	(Danielsen et al., 2020)

Species	Stressor	Substance interaction with lung residents cell membrane components	Transcription of genes encoding acute phase proteins	Reference
			change in *Saa1* mRNA expression in liver tissue.	
Mouse	Titanium dioxide (NM-2)	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 162 µg. No change in *Saa1* mRNA expression in liver tissue.	(Danielsen et al., 2020)
Mouse	Tube titanium dioxide	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 and 3 days after exposure to 54 and 162 µg. Increased *Saa1* mRNA expression in liver tissue 1 day after exposure to 162 µg.	(Danielsen et al., 2020)
Mouse	Quartz	Yes, intratracheal instillation of 18, 54 and 162 µg.	Yes, increased *Saa3* mRNA expression in lung tissue 1 day after exposure to 54 and 162 µg, and 3 days after exposure to 162 µg. No change in *Saa1* mRNA expression in liver tissue.	(Danielsen et al., 2020)
Mouse	Singlewalled carbon nanotubes	Yes, pharyngeal aspiration of 40 µg.	Yes, increased *Saa1*, *Sap* and haptoglobin gene expression in liver tissue.	(Erdely et al., 2011)
Mouse	Multiwalled carbon nanotubes	Yes, pharyngeal aspiration of 40 µg.	Yes, increased *Saa1*, *Sap* and haptoglobin gene expression in liver tissue.	(Erdely et al., 2011)
Mouse	Serum amyloid A	Yes, once a week for 10 weeks	Yes, significantly increase of *Saa3* mRNA levels in lung tissue and *Saa1* mRNA levels in liver tissue.	(Christopherse n et al., 2021)

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